

What is claimed:

- 1 1. A battery connected to a computer system for supplying
2 power to said computer system, comprising:

3 a first sensor provided at a first location in said battery
4 for detecting temperature;

5 a second sensor provided at a second location different from
6 said first location in said battery for detecting
7 temperatures; and
8
9 a CPU for outputting information on the action to be
10 implemented by said computer system to said computer system
11 according to the temperature detected by said first sensor and
the temperature detected by said second sensor.
- 1 2. The battery according to Claim 1, wherein said CPU selects a
2 predetermined state from a plurality of states to which said
3 computer system can transition, according to the respective
4 temperatures obtained by said first sensor and said second
5 sensor, and outputs information on said selected
6 predetermined state to said computer system.
- 1 3. The battery according to Claim 1, wherein the first sensor is
2 provided at a location in proximity to a protection circuit for
3 preventing an overcurrent and the second sensor is provided a
4 location in proximity to the surface of a cover housing said
5 battery.

- 1 4. The battery according to Claim 1, wherein the action to be
2 implemented by said computer system is selected based on
3 temperature levels indicated by said sensors from a plurality
4 of measures including decreasing the clock frequency of the
5 system unit CPU in the computer system, intermittently
6 operating said system unit CPU, a suspend CPU operation, and
7 turning off the power completely.
- 1 5. A battery pack which is attached to an electric equipment,
2 comprising:
- 3 a cover forming a part of the outer wall of said electric
4 equipment when said battery pack is attached to said electric
5 equipment;
- 6 an outer wall sensor for detecting the temperature in proximity
7 to a predetermined location on said cover;
- 8 a memory for storing predetermined relations between the
9 temperatures detected by said outer wall sensor and a plurality
10 of temperature rise suppressing measures;
- 11 a process determination logic for determining a temperature
12 rise suppressing measure from the temperature detected from
13 said out wall sensor, according to the relations stored in said
14 memory; and
- 15 an output logic for outputting to said electric equipment
16 commands for initiating the temperature rise suppressing
17 actions determined by said process determination logic.

1 6. The battery pack according to Claim 5, further comprising an
2 internal temperature detecting sensor for detecting the
3 temperature at a predetermined location in said battery pack,
4 wherein including the conditions for the temperature detected
5 by said internal temperature detecting sensor as conditions
6 different from the conditions for the temperature detected by
7 said outer wall sensor, said memory predetermines and stores
8 the relations between the conditions for these temperatures and
9 the plurality of temperature rise suppressing measures.

1 7. The battery pack according to Claim 6, wherein said
2 predetermined location for which temperature is detected by
3 said internal temperature detecting sensor is a protection
4 circuit.

1 8. A computer system constructed so that a battery pack for power
2 supply can be attached to the system unit thereof,

3 wherein said battery pack comprises:

4 a cover forming a part of the outer wall in said computer
5 system when said battery pack is attached to said computer
6 system;

7 a temperature detector for detecting the temperature in
8 proximity to a predetermined location on said cover forming a
9 part of said outer wall;

10 an operation level selector for selecting a level of operation
11 in said computer system according to the temperature detected
12 by said temperature detector; and

13 a transmitter for transmitting information on the level of
14 operation selected by said operation level selector to said
15 system unit, and

16 said system unit operates according to said information
17 transmitted from said battery pack.

1 9. The computer system according to Claim 8, wherein said system
2 unit includes a CPU which functions as a brain of said computer
3 system, and

4 said operation level selector in said battery pack selects a
5 first state for decreasing the clock frequency of said CPU and
6 a second state for intermittently operating said CPU as said
7 level of operation.

1 10. An electric apparatus constructed so that a battery pack for
2 power supply can be attached to the system unit thereof,
3 comprising:

4 a plurality of temperature detectors provided for a plurality
5 of locations in said battery pack;

6 a measure selector for selecting the temperature rise
7 suppressing measure of a specific stage from the temperature
8 rise suppressing measures of a plurality of stages, according
9 to each temperature detected by said plurality of temperature
10 detectors; and

11 a suppressing measure implementing logic for implementing the
12 temperature rise suppressing measure selected by said measure
13 selector.

1 11. The electric apparatus according to Claim 10, wherein said
2 measure selector determines stepwise temperature rise
3 suppressing measures of lower to higher levels according to the
4 temperature condition of each of the temperatures detected by
5 said plurality of temperature detectors, and if the temperature
6 detected by at least one temperature detector of said plurality
7 of temperature detectors corresponds to the temperature
8 conditions of a stage at a level higher than the temperature
9 rise suppressing measure of the current stage, it selects the
10 temperature rise suppressing measure of said stage
11 corresponding to said temperature condition.

1 12. The electric apparatus according to Claim 11, wherein said
2 measure selector selects any two or more of a measure for
3 decreasing the clock frequency of the CPU in said system unit,
4 a measure for intermittently operating said CPU, a suspend
5 measure in the system unit, and a power-down measure as
6 stepwise temperature rise suppressing measures.

1 13. The electric apparatus according to Claim 12, wherein if the
2 temperature detected by all the temperature detectors of said
3 plurality of temperature detectors correspond to the
4 temperature conditions of a stage at a level lower than the
5 temperature rise suppressing measure of the current stage, said
6 measure selector selects the temperature rise suppressing
7 measure at the lower level from the current stage.

1 14. The electric apparatus according to Claim 10, wherein a
2 plurality of types of battery packs can be attached to said
3 system unit, and from said measure selector, a temperature rise
4 suppressing measure is selected under a different temperature
5 condition for each type of attached battery pack.

1 15. The electric apparatus according to Claim 10, wherein said
2 measure selector is provided in said battery pack, and said
3 electric equipment further includes a transmitter for
4 transmitting information on the temperature rise suppressing
5 measure selected by said measure selector to said system unit
6 from said battery pack.

- 1 16. A method for controlling a temperature of a battery which is
2 attached to a computer system, comprising the steps of:
- 3 setting different temperature conditions as criteria for
4 determination of temperature rise for a plurality of locations
5 in said battery;
- 6 presetting the relations between said temperature conditions
7 to be set and the stepwise temperature rise suppressing
8 measures of lower to higher levels which are implemented by
9 said computer system;
- 10 detecting the temperatures at said plurality of locations in
11 said battery; and
- 12 selecting the temperature rise suppressing measure at the
13 highest stage among the temperature conditions to which the
14 detected temperature at said plurality of locations are
15 corresponding, respectively.
- 1 17. The method for controlling the temperature of a battery
2 according to Claim 16, wherein said plurality of locations for
3 which temperature conditions are selected include the proximity
4 of the surface of said battery and/or the proximity of a
5 protection circuit.
- 1 18. The method for controlling the temperature of a battery
2 according to Claim 16, wherein the relations between said
3 temperature conditions and said temperature rise suppressing
4 measures are preset by table information.